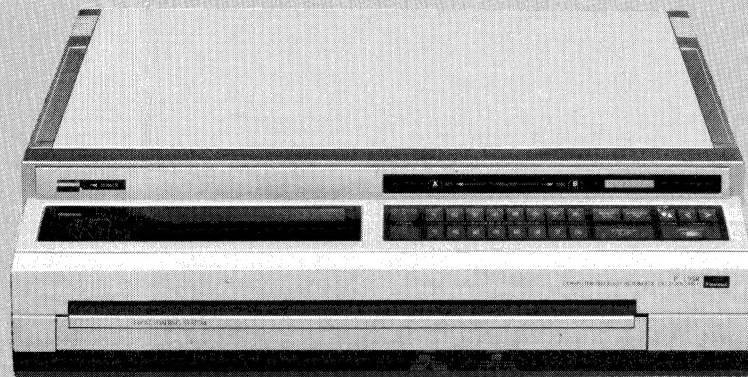


SERVICE MANUAL

COMPUTERIZED FULLY AUTOMATIC
DD TURNTABLE

SANSUI P-L95R

(Silver & Black Model)



CAUTION

1. Parts identified by the Δ symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

•SPECIFICATIONS

Type.....	Direct-drive turntable
Rated speeds.....	33-1/3, 45 rpm
Platter.....	Aluminum alloy diecast, 76 mm (3") diameter, 0.37 kg (0.8 lbs.) weight
Motor	Coreless and Brushless DC/FG Servo
Wow/flutter	0.08% (WRMS)
Signal-to-noise ratio	Better than 72 dB (DIN-B) Better than 60 dB (IEC-B)
Effective tonearm length ...	70 mm (2-3/4")
Cartridge.....	Dual Magnet type
Output voltage.....	2.5 mV (1,000 Hz, 35.4 mm/sec)
Correct load impedance...	47 kilohms
Frequency response.....	10 ~ 20,000 Hz
Stylus.....	0.6 mil diamond stylus (SN-909 replacement stylus)
Others:	
Power voltage	110 ~ 120V/220 ~ 240V (50/60 Hz)
For U.S.A. and Canada ..	120 V (60 Hz)
Power consumption	25 W
Dimensions.....	435 mm (17-1/8") W 128 mm (5-1/32") H 355 mm (14") D
Weight.....	8.2 kg (18.1 lbs.) net 9.7 kg (21.4 lbs.) packed

* Design and specifications subject to change without notice for improvements.
* Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors.

CAUTION

1. The symbols, UL, CSA, SA, BS, UK, EU, AS, XX <EXPORT> and XX-V <EXPORT(V)> on the parts list and the schematic diagram mean followings respectively.
UL..... Manufactured for U.S.A market.
(Underwriters Laboratories approved model.)
CSA..... Manufactured for Canadian market.
SA..... Manufactured for South African market.
BS, UK..... Manufactured for United Kingdom market.
EU..... Manufactured for European market.
AS..... Manufactured for Australian market.
XX <EXPORT>..... Standard Version with Inner Voltage Selector.
XX-V <EXPORT(V)>.... Standard Version with Outer Voltage Selector.
NON MARK..... Common Parts.
2. Some printed circuit boards are not supplied as the assembled. To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.
3. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.
4. Abbreviations in this service manual are as follows.

•Abbreviations List

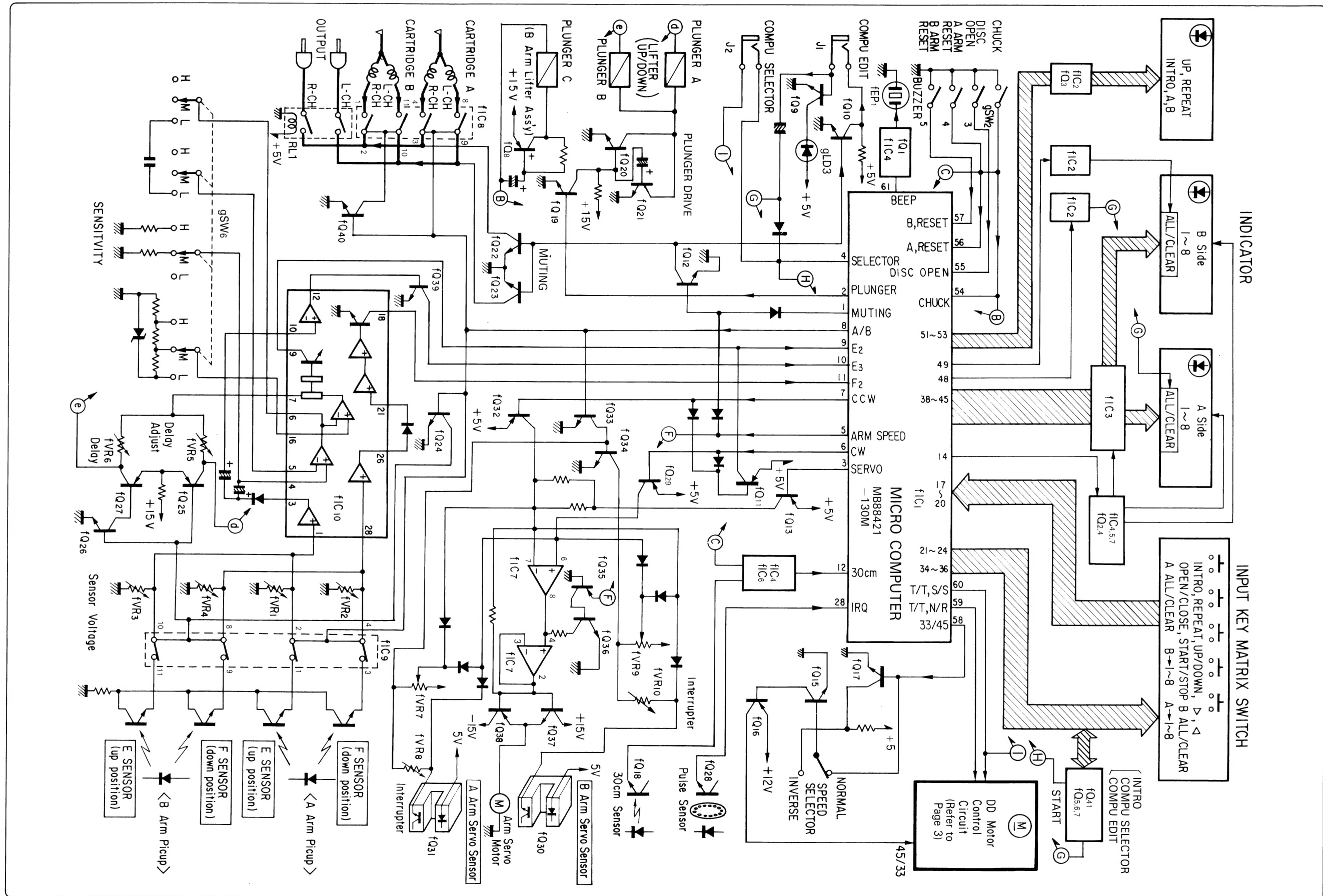
C.R. : Carbon Resistor	E.B.L. : Low Leak Bi-Polar
S.R. : Solid Resistor	Electrolytic Capacitor
Ce.R. : Cement Resistor	Ta.C. : Tantalum Capacitor
M.R. : Metal Film Resistor	F.C. : Film Capacitor
F.R. : Fusing Resistor	M.P. : Metalized Paper Capacitor
N.I.R. : Non-Inflammable Resistor	P.C. : Polystyrene Capacitor
A.R. : Array Resistor	G.C. : Gimmic Capacitor
C.C. : Ceramic Capacitor	A.C. : Array Capacitor
C.T. : Ceramic Capacitor,	V.R. : Variable Resistor
Temperature Compensation	S.V.R. : Semi Variable Resistor
E.C. : Electrolytic Capacitor	SW. : Switch
E.L. : Low Leak Electrolytic	Chip R. : Chip Resistor
Capacitor	Chip C. : Chip Capacitor
E.B. : Bi-Polar Electrolytic	
Capacitor	

Sansui

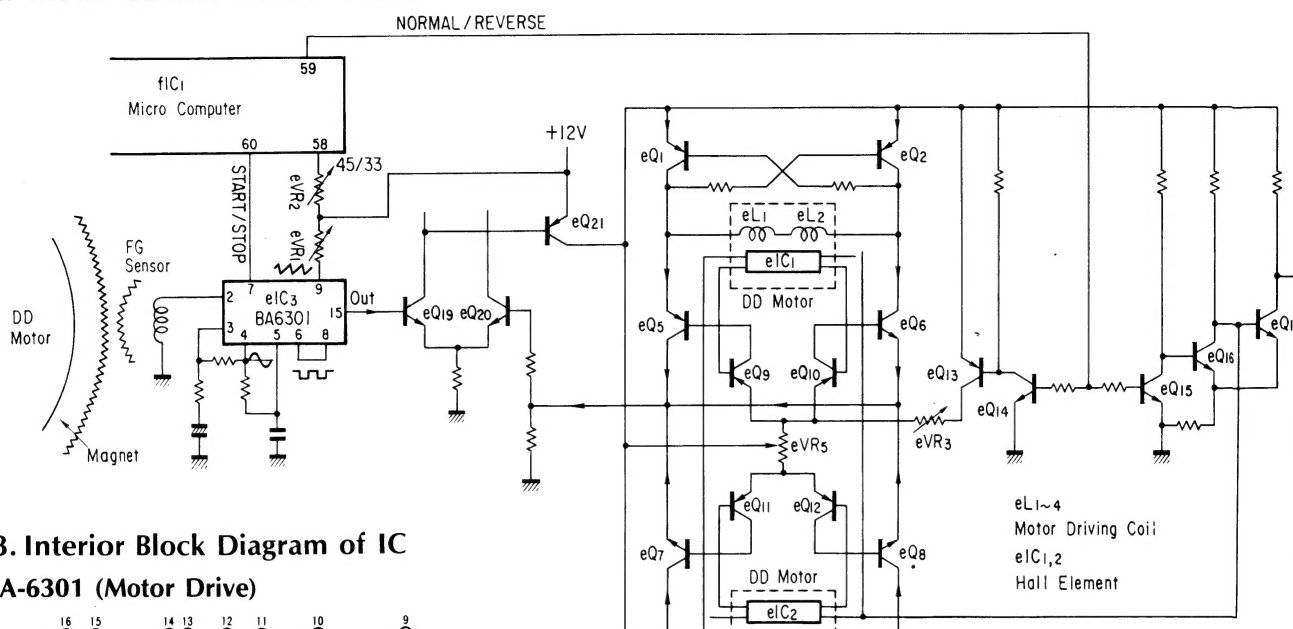
SANSUI ELECTRIC CO., LTD.

1. BLOCK DIAGRAM

1-1. Arm Control Circuit

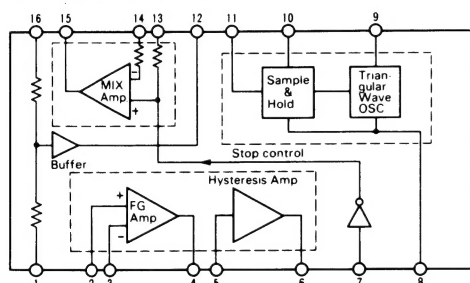


1-2. Motor Control Circuit <S-0206>

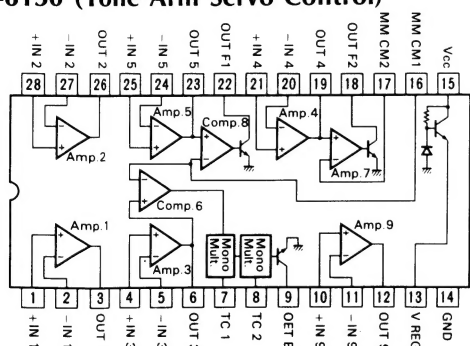


1-3. Interior Block Diagram of IC

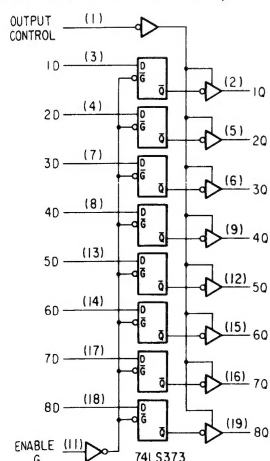
•BA-6301 (Motor Drive)



•BA-6150 (Tone Arm Servo Control)



- 74LS373 (Octal 3state D-latch)



- MB88421 (Micro computer)

Pin	Signal	Pin	Signal	Pin	Signal
1	Muting Output	64	Vcc	65	+ 5V
2	Plunger Output	63	VM	66	GND
3	Servo Output	62	Vss2	67	Buzzer Output
4	Selector Output	61	P3	68	Start/Stop Output
5	Arm Speed Output	60	P2	69	Normal Reverse Output
6	CW Output	59	P1	70	33/45 Select Output
7	CCW Output	58	P0	71	B Arm Reset Input
8	A/B Selector Output	57	E23	72	A Arm Reset Input
9	E2 Signal Input	56	E22	73	Disk Open Input
10	E3 Signal Input	55	E21	74	Chuck Oper Input
11	F2 Signal Input	54	E20	75	UP
12	30cm Sensor Input	53	E19	76	Repeat
13	GND	52	E18	77	Intro
14	A Strobe Output	51	E17	78	b All
15	B Strobe Output	50	E16	79	a All
16		49	E15	80	b
17		48	E14	81	a
18	Key Input	47	E13	82	8
19		46	E12	83	7
20		45	E11	84	6
21		44	E10	85	5
22	Key Output	43	E9	86	4
23		42	E8	87	3
24		41	E7	88	2
25	Xtal	40	E6	89	1
26		39	E5	90	
27	Reset	38	E4	91	
28	IRQ	37	E3	92	
29	TC	36	E2	93	
30	SC/T0	35	E1	94	
31	SI	34	E0	95	
32		33	S0	96	
33	GND				

2. MAIN CIRCUIT FUNCTIONS

1. Pulse sensor

In the microcomputer, various motor speeds are stored, which are suitable for the reset positions and the lead-out positions of 30cm, 25cm and 17cm size record disk. The arm is moved down in combination of signals detected by the 30cm disk sensor, 25cm and 17cm disk detection signals (E_3) detected by the E sensor, and signals detected by the pulse sensors corresponding to disk sizes.

2. 30cm disk selecting sensor

The position of the arm on the arm rest is located near the lead-in position of a 30cm disk. Therefore, a separate sensor is arranged to securely select a 30cm disk, without use of the signal (E_3) detected by the E sensor.

3. E, F sensor

The signals detected by the E, F sensor are divided into three signals E_2 , E_3 , and F_2 through appropriate circuits.

- **E_2 signal** indicates the number of counted musics, which is necessary to move down the tone arm onto the start of a desired music during the automatic music selection operation.
- **E_3 signal** indicates the presence or absence of a 25cm or 17cm size disk.
- **F_2 signal** indicates the detection of a music intermission during automatic music selection operation (tracing operation) and detection of the end of the last music. The arm is lifted up in combination of this F_2 signal and the pulse sensor signals.

4. Delay circuit

Since the E sensor is located about 3mm ahead of the stylus tip, it is necessary to delay the signal detected by the E sensor electrically. By adjusting this circuit, it is possible to eliminate the signal detection error caused by mismatching of the mechanism operation.

5. Music selection sensitivity switching circuit

The signals E_2 , F_2 are converted into three different stages in order to perform an accurate automatic music selection operation.

6. CHUCK switch (gSW_2)

This switch detects that a record disk is perfectly mounted.

7. DISK OPEN switch (gSW_3)

This switch detects that the disk plate is pulled out perfectly.

8. A, B ARM RESET switches (gSW_4 , gSW_5)

These switches detect that the A, B arms are reset, respectively.

9. Muting operation timing

- During the automatic disk selection operation and the manual operation, the muting is off when the lifter is down but on when the lifter is up.
- When the stylus goes down onto a music intermission interval during the automatic music selection operation, the muting is off 1.7 secs after the stylus begins to go down. Further, when the stylus goes down onto a modulated groove near the end of the preceding music, the muting is off the instant the succeeding music intermission is detected.

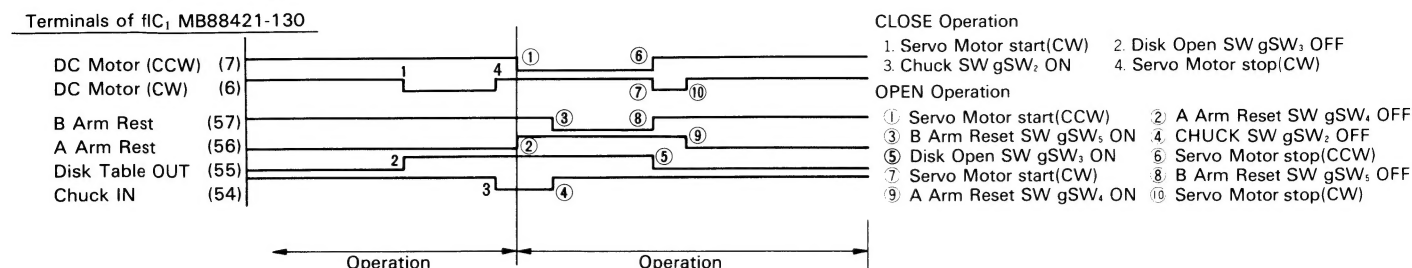
•Input Key Matrix of Microcomputer IC MB88421

NO.	Key Name	Key Matrix	NO.	Key Name	Key Matrix	NO.	Key Name	Key Matrix
1	A NO.1	$K_0 O_3$	11	B NO.3	$K_2 O_1$	21	EJECT	$K_0 E_1$
2	A NO.2	$K_1 O_3$	12	B NO.4	$K_3 O_1$	22	◀	$K_1 E_1$
3	A NO.3	$K_2 O_3$	13	B NO.5	$K_0 O_0$	23	▶	$K_2 E_1$
4	A NO.4	$K_3 O_3$	14	B NO.6	$K_1 O_0$	24	PAUSE	$K_3 E_1$
5	A NO.5	$K_0 O_2$	15	B NO.7	$K_2 O_0$	25	INTRO	$K_0 E_2$
6	A NO.6	$K_1 O_2$	16	B NO.8	$K_3 O_0$	26	REPEAT	$K_1 E_2$
7	A NO.7	$K_2 O_2$	17	A ALL CLEAR	$K_0 E_0$	27		
8	A NO.8	$K_3 O_2$	18	B ALL CLEAR	$K_1 E_0$	28		
9	B NO.1	$K_0 O_1$	19	S/S	$K_2 E_0$	29		
10	B NO.2	$K_1 O_1$	20			30		

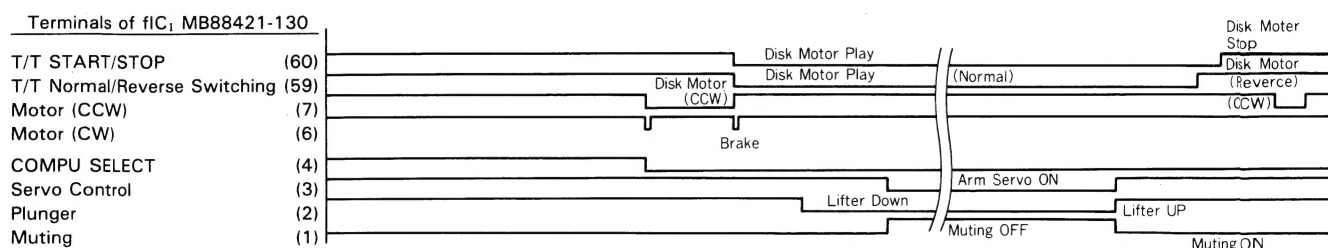
1	2	3	4	Pin No.
5	6	7	8	O_3 (24)
9	10	11	12	O_2 (23)
13	14	15	16	O_1 (22)
17	18	19	20	O_0 (21)
21	22	23	24	E_0 (34)
25	26	27	28	E_1 (35)
				E_2 (36)
K_0	K_1	K_2	K_3	
Pin No. (17)	(18)	(19)	(20)	

3. MAIN OPERATION TIMING CHART

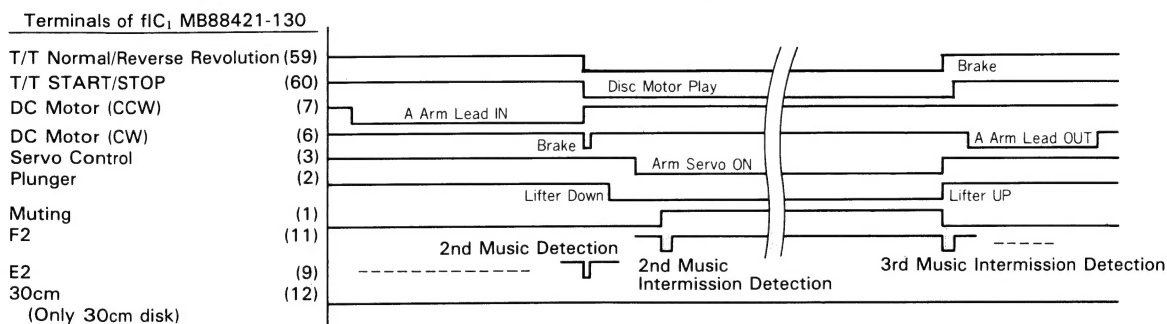
3-1. Loading Timing



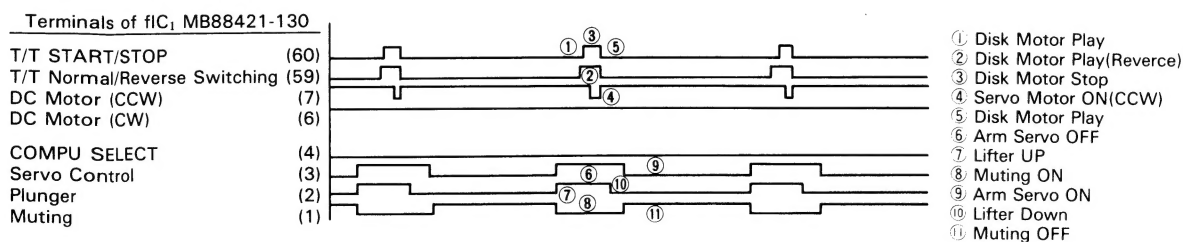
3-2. 30cm Disk Selection Lead-in, End Timing



3-3. 2nd Music Selection Timing on 30cm Disk of A Side



3-4. ALL INTRO SKIP Timing

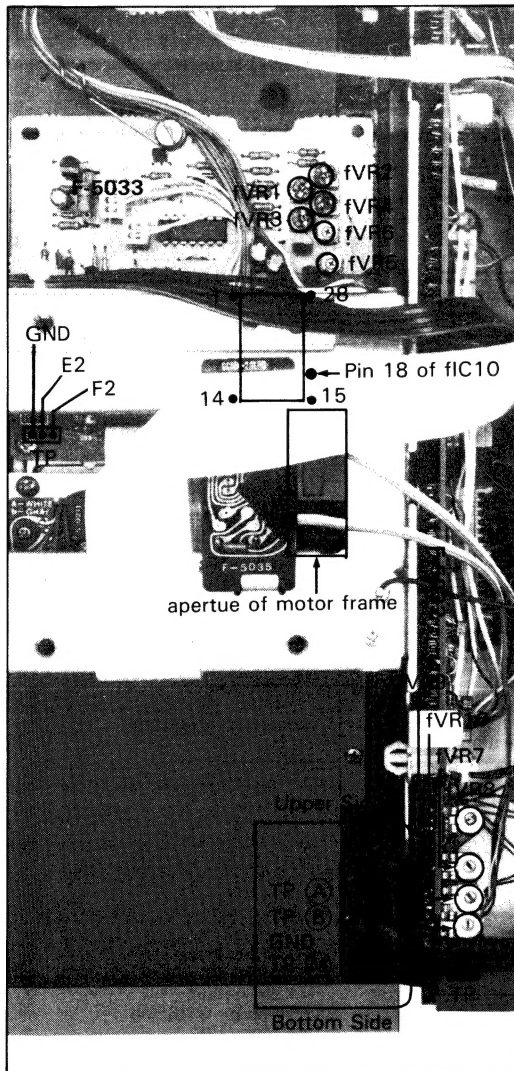


4. ADJUSTMENT

A. Preparation

1. Remove the top plate. (See "How to replace the main parts" on page 15.)
2. Since the TP pins of F-5033 board may disappear under the motor frame when the arm moves, connect some wires to the TP pins necessary for adjustment. (See Fig. 4-1)
3. Turn on the interlock switch in accordance with the following procedure: (See Fig. 4-2)
 - 1) Remove two small screws for mounting the interlock switch.
 - 2) Roll up an appropriately sized paper as shown, insert the rolled paper into the contact portion of the microswitches, and then fixed it by an adhesive tape.

Fig. 4-1



B. Caution



1. The A-arm and B-arm are mechanically linked with each other. Further, the reset position of A-arm corresponds to the lead-out position of B-arm. Therefore, it is possible to know the B-arm position on the basis of the A-arm position. However, positively depress each key ALL a, ALL b, , and .
2. The adjusting Semi variable resistor of F-5033 may disappear under the motor frame as the arm moves. Therefore, adjust it through an adjusting aperture of motor frame. (See Fig. 4-1)
3. In case the operation keys are inoperative, turn off the main power switch and then turn on it again before depressing the operation keys. (See Fig. 4-1)
4. Perform the adjustment in accordance with the determined procedure.

Fig. 4-2

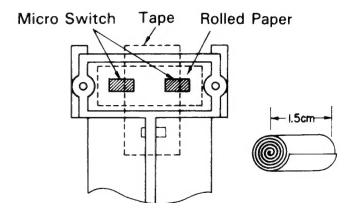
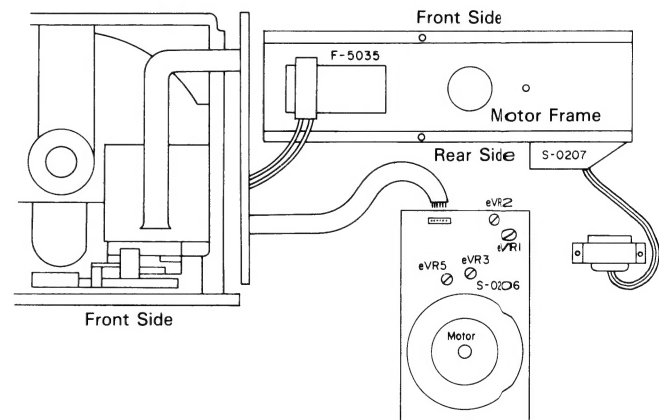


Fig. 4-3

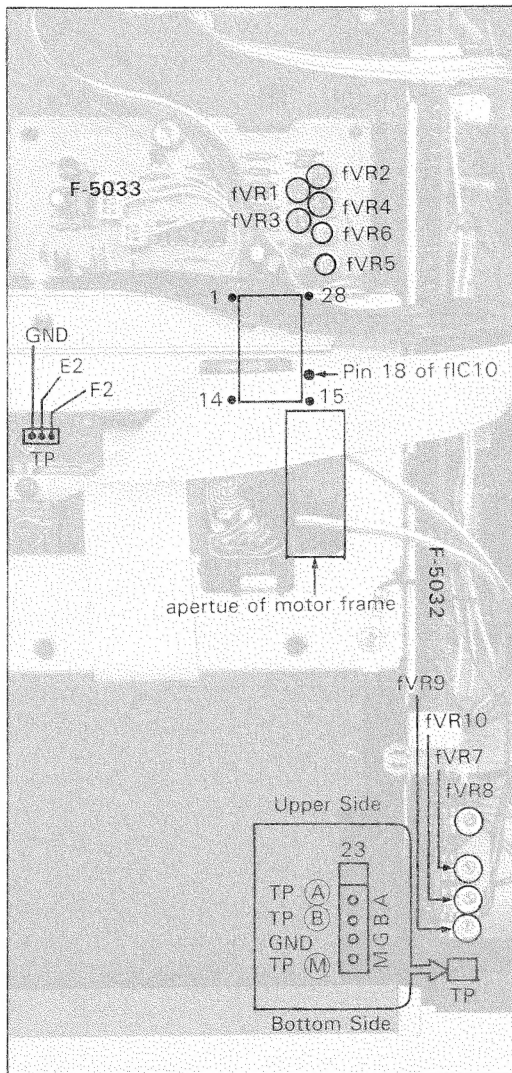


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Fig. 4-1



B. Caution



1. The A-arm and B-arm are mechanically linked with each other. Further, the reset position of A-arm corresponds to the lead-out position of B-arm. Therefore, it is possible to know the B-arm position on the basis of the A-arm position. However, positively depress each key ALL a, ALL b, , and .
2. The adjusting Semi variable resistor of F-5033 may disappear under the motor frame as the arm moves. Therefore, adjust it through an adjusting aperture of motor frame. (See Fig. 4-1)
3. In case the operation keys are inoperative, turn off the main power switch and then turn on it again before depressing the operation keys.
4. Perform the adjustment in accordance with the determined procedure.

Fig. 4-2

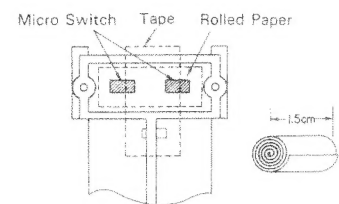
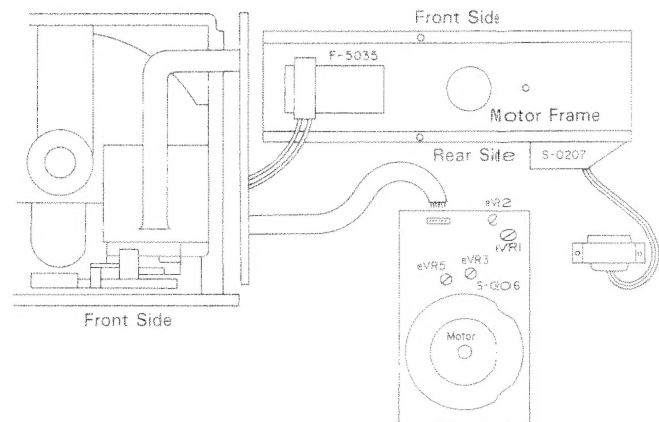
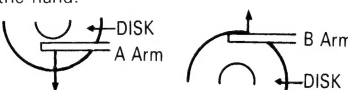


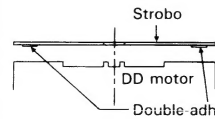
Fig. 4-3



•Adjustment List (See Figs. 4-1 and 4-3 for points to be checked and adjusted)

	Adjustment Procedure	Checked Position	Adjusted Parts	Adjustment Contents	Adjusting Conditions
1	A-arm interrupter voltage adjustment	Between TP A on F-5032 (fQ31 emitter) and GND DC voltmeter	fVR8 (F-5032)	DC 4V ± 0.1V	1. Without any record disk. 2. Stop DD motor. 3. Bring A-arm near lead-out position (B-arm read-in position) by the hand. 4. Adjust the voltage when A- or B-arm is moved to its extreme outside position by the hand.
2	B-arm interrupter voltage adjustment	Between TP B on F-5032 (fQ30 emitter) and GND DC voltmeter	fVR10 (F-5032)	DC 4V ± 0.1V	
3	A-arm servo voltage adjustment	Between TP M on F-5032 (on the Positive side of arm servo-motor) and GND DC voltmeter	fVR7 (F-5032)	DC -1V (It is preferable that the arm moves about 0.5mm toward the inside when lifter is down.)	1. Set a 30cm disk. 2. Stop DD motor. 3. Bring A-arm near lead-out position or B-arm near lead-in position by the hand. 4. Set lifter down by the hand.
4	B-arm servo voltage adjustment	Between TP M on F-5032 (on the Positive side of arm servo-motor) and GND DC voltmeter	fVR9 (F-5032)	DC +1V (It is preferable that the arm moves about 0.5mm toward the inside when lifter is down.)	
5	A-arm height adjustment	Measure the height between disk surface and E, F sensor with a rule.	Height adjusting screw (See Fig. 6-7 on page 14).	Adjust the distance between record disk and sensor to 6.5 ~ 7mm.	1. Set a 30cm disk. 2. Stop DD motor. 3. Move the arm to a position 10 away from the center of the disk by the hand. 4. Keep lifter in UP state.
6	B-arm height adjustment	Measure the height between disk surface and E, F sensor with a rule.	Height adjusting screw (See Fig. 6-8 on page 14).	Adjust the distance between record disk and sensor to 6.5 ~ 7mm. The distance between the disk bisecting plane perpendicular to the disk axis and sensor is to be adjusted to 7 ~ 7.5mm as shown below.	1. Set a 30cm disk. 2. Stop DD motor. 3. Move B-arm to reset position by the hand. 4. Keep lifter in UP state. 5. The adjusting screw appears, if the main power switch is turned off when the disk base is pulled outward to its extreme position by depressing OPEN key without setting any record disk.
7	A-arm E-sensor sensitivity adjustment	Between TPE ₂ on F-5033 (fD34, Cathode) and GND DC voltmeter	fVR1 (F-5033)	DC 2.5V ± 0.1V	1. Set a 30cm disk having no cut grooves. 2. Stop DD motor. 3. Move the arm to a position about 10cm away from the disk center by the hand. Since the adjusting control knob is not rotatable at this position, move the arm to the lead-in position only while rotating the adjusting control knob.
8	A-arm F-sensor sensitivity adjustment	Between TPF ₂ on F-5033 (fD32, Cathode) and GND DC voltmeter	fVR2 (F-5033)	DC 2.7V ± 0.1V	4. Adjust E sensor with the arm kept in UP state and F sensor with the arm kept in DOWN state.
9	B-arm E-sensor sensitivity adjustment	Between TPE ₂ on F-5033 (fD34, Cathode) and GND DC voltmeter	fVR3 (F-5033)	DC 2.5V ± 0.1V	1. Set a 30cm disk having no cut grooves. 2. Stop DD motor. 3. Move the arm to a position about 10cm away from the disk center by the hand. Since the adjusting control knob is not rotatable at this position, move the arm to the lead-in position only while rotating the adjusting control knob.
10	B-arm F-sensor sensitivity adjustment	Between TPF ₂ on F-5033 (fD32, Cathode) and GND DC voltmeter	fVR4 (F-5033)	DC 2.7V ± 0.1V	4. Adjust E sensor with the arm kept in UP state and F sensor with the arm kept in DOWN state.

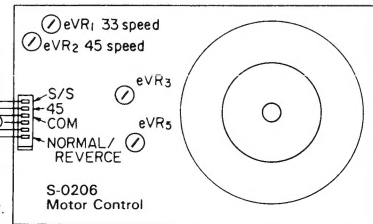
	Adjustment Procedure	Checked Position	Adjusted Parts	Adjustment Contents	Adjusting Conditions
11	A-arm E, F sensor lateral-direction adjustment (Perform this adjustment only where A-arm is in a bad condition even after E, F sensor sensitivity adjustment (Item 7 and 8) and E ₂ signal-ready adjustment (Item 13) have been achieved.)	Between fIC10 Pin18 and GND DC voltmeter	E, F sensor adjusting screw	1. Start music reproduction by selecting a music having a short music intermission interval between two modulated grooves. 2. Adjust the arm so that the stylus comes down onto a position a little ahead of the short music intermission interval and an L-level voltage may be generated the instant the stylus moves across the short music intermission interval. 3. Be sure that the muting is off (music reproduction starts) beginning from the start of the selected music. 4. In the case of the B-arm, it is impossible to see the record disk surface. Therefore, select the same music as in the A-arm and start the music reproduction. The same adjustment as in the A-arm should be made after UP/DOWN indicator light goes off.	1. Set a 30cm disk having a short music intermission interval. 2. Set the sensitivity selector switch to H. 3. Rotate A- or B-arm E, F sensor adjusting screw counterclockwise to its extreme position to move the sensor at a position the nearest to the center of the disk. 4. A-Side adjustment: Turn delay adjusting S.V.R (fVR5) fully counterclockwise. B-Side adjustment: Turn delay adjusting S.V.R (fVR6) fully counterclockwise. Do not turn fully counterclockwise fVR5 and fVR6 at the same time.
12	B-arm E, F sensor lateral-direction adjustment (Perform this adjustment only where A-arm is in a bad condition even after E, F sensor sensitivity adjustment (Items 9 and 10) and E ₂ signal-ready adjustment (Item 14) have been achieved.)	Between fIC10 Pin18 and GND DC voltmeter	E, F sensor adjusting screw		
13	A-arm E ₂ signal delay adjustment	Stylus-down position during automatic music selection operation	fVR5 (F-5033)	1. Repeatedly reproduce a music having a short music intermission interval between two modulated grooves by leading-in the arm onto a position a little ahead of the short music intermission interval. 2. Check that when the stylus goes down onto a position ahead of the short music intermission interval, the muting operation is off about 4 ~ 6 secs after the stylus tip is brought into contact with the disk. 3. In the case of the B-arm, it is impossible to see the record disk surface. Therefore, select the same music as in the A-arm and start the music reproduction. Be sure that the muting is off about 4 ~ 6 secs after the UP/DOWN indicator light goes off.	1. Set a 30cm disk having a short music intermission interval. 2. Set the sensitivity selector switch to H.
14	B-arm E ₂ signal delay adjustment	Stylus-down position during automatic music selection operation	fVR6 (F-5033)		
15	A-arm lead-in adjustment	Lead-in position	Adjusting cam	1. Lead-in the arm onto a 30cm disk during automatic disk selection operation and adjust the arm so that the stylus can come down onto the lead-in groove. 2. Check the lead-out operation, simultaneously. After the B-arm is led out, the A-arm operation begins, the A-arm returns to its reset position. 3. Confirm 1.2 above in 17 cm disk as well.	1. Set the sensitivity selector switch to M. 2. Set a 30cm disk. 3. Set a 17cm disk after the above 30cm disk adjustment.
16	B-arm lead-in adjustment	Bottom view			
17	DD motor speed adjustment to 33rpm	Motor revolution speed	eVR1 (S-0206)	Adjust the motor speed so that a strobo pattern of 33rpm appears to be stopped. (only adjustment in the reverse direction.)	1. Remove motor frame and place it as shown in Fig. 4-3 on page 6. 2. Put the strobo pattern center at the disk center and fix the pattern by a double-adhesive tape.
18	DD motor speed adjustment to 45rpm	Motor revolution speed	eVR2 (S-0206)	Adjust the motor speed so that a strobo pattern of 45rpm appears to be stopped. (only adjustment in the reverse direction.)	3. Remove the 6-lead parallel cord from board S-0206 as shown and then connect the +15V lead and the GND lead to 15V terminal and GND terminal of the 6-pin connector, respectively. 4. Connect a resistor to 6-pin connector as shown. 5. The motor speed can be selected as shown in the Table by switching the circuit.
19	Mechanical sensors are used when eVR3 and eVR5 are replaced.				



	S ₁ ~ S ₃
	OPEN CLOSE
S ₁	33rpm 45rpm
S ₂	TURN STOP
S ₃	NORMAL REVERSE

Parallel Cord
GND +15V
White

R₁, R₂, R₃
4.7kΩ 1/4W C.R.

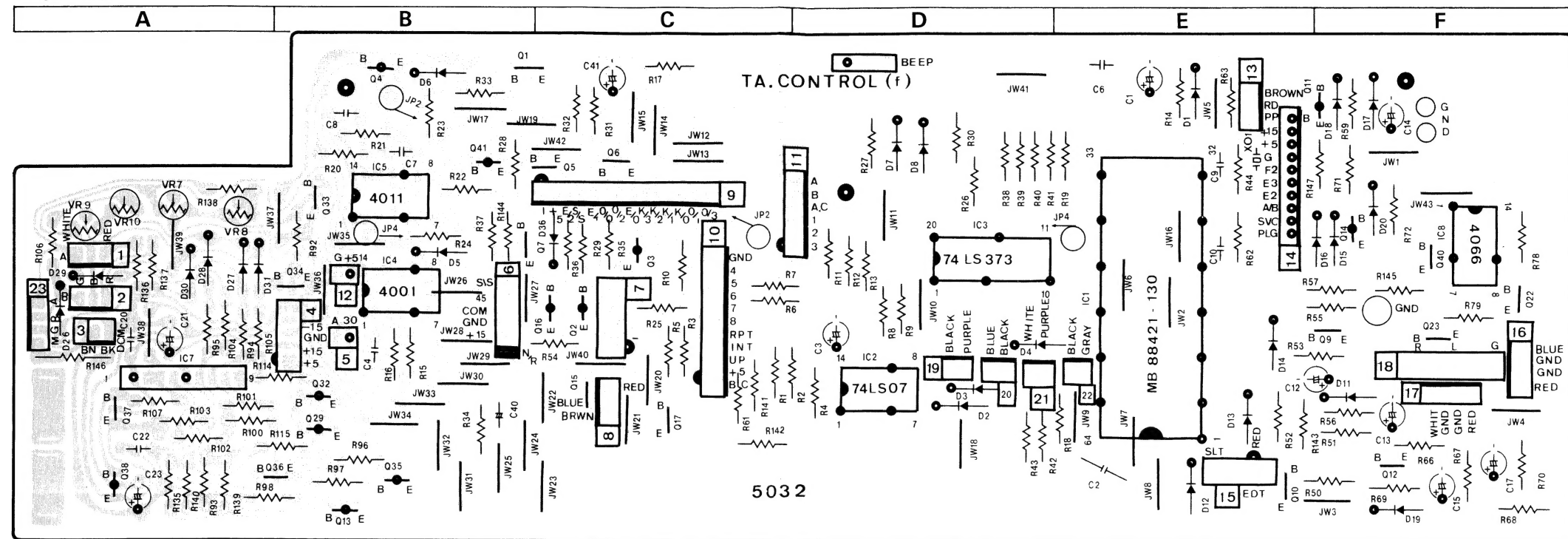


Note) There exists a set where apertures are formed in board F-0206 on the back side of eVR1 and eVR2.
In the set of this type, it is possible to adjust the motor speed after setting a 30cm disk and mounting a strobo pattern on the disk, without removing the motor frame.

5. PARTS LOCATION & PARTS LIST

5-1. F-5032 Tone Arm Control Main Board (Stock No. 00901701)

Component Side



Parts List

Parts No.	Stock No.	Description
•Transistor		
fQ1	48171600	DTC114YS
fQ2	46367001	2SA1115
	or 46367201	2SA1048
	or 48058601	2SA933S
fQ3	46367001	2SA1115
	or 46367201	2SA1048
	or 48058601	2SA933S
fQ4	46367001	2SA1115
	or 46367201	2SA1048
	or 48058601	2SA933S
fQ5	46367101	2SC2603
	or 46367301	2SC2458
	or 48058801	2SC1740S
fQ6	46367101	2SC2603
	or 46367301	2SC2458
	or 48058801	2SC1740S
fQ7	46367101	2SC2603
	or 46367301	2SC2458
	or 48058801	2SC1740S
fQ9	48171600	DTC114YS
fQ10	46367101	2SC2603
	or 46367301	2SC2458
	or 48058801	2SC1740S
fQ11	48183400	DTA114YS
fQ12	46367101	2SC2603
	or 46367301	2SC2458
	or 48058801	2SC1740S
fQ13	48183400	DTA114YS
fQ14	46367001	2SA1115
	or 46367201	2SA1048
	or 48058601	2SA933S
fQ15	48171600	DTC114YS
fQ16	48183400	DTA114YS
fQ17	48171600	DTC114YS
fQ22	46540801	2SC2878
	or 46604301	2SC3327
	or 48055901	2SD1468S
fQ23	46540801	2SC2878
	or 46604301	2SC3327
	or 48055901	2SD1468S
fQ32	48183400	DTA114YS
fQ33	46719900	DTC124

Parts No.	Stock No.	Description
fQ34	46367101	2SC2603
	or 46367301	2SC2458
	or 48058801	2SC1740S
fQ35	46367001	2SA1115
	or 46367201	2SA1048
	or 48058601	2SA933S
fQ36	46540801	2SC2878
	or 46604301	2SC3327
	or 48055901	2SD1468S
fQ37	03083901	2SD313AL
fQ38	48063301	2SB507
fQ40	46719900	DTC124
fQ41	46719800	DTA124ES
•IC		
fIC1	46938600	MB88421-130M
fIC2	46148500	HD7407P
fIC3	48003200	MB74LS373
	or 48053800	HD74LS373P
	or 48053900	M74LS373P
	or 48074500	DN74LS373
	or 48074600	TC74HC373P
	or 48125900	LR74HC373
fIC4	03610500	TC4001BP
	or 07186600	MB84001BM
	or 46443800	μPD4001BC
	or 48050000	MSM4001BRS
	or 48067200	BU4001B
fIC5	03604100	TC4011P
	or 07207200	MB84011BM
	or 46427200	μPD4011BC
fIC7	46087100	NJM4558S
	or 46146500	BA715
	or 46147700	M5218L
fIC8	07224800	TC4066BP
	or 07264600	MSM4066RS
	or 46164300	MB84066B
	or 46255000	LC4066BH
	or 46421000	μPD4066BC
	or 48063800	BU4066B
fXO1	46925800	Quartz Element KBR-4.19M

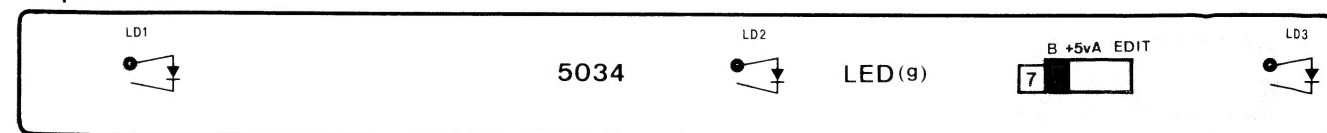
Parts List < F-5032 >

Parts No.	Stock No.	Description
•Diode		
fD1	03117600	1S2473T77
fD2	03117600	1S2473T77
fD3	03117600	1S2473T77
fD4	03117600	1S2473T77
fD5	03117600	1S2473T77
fD6	03117600	1S2473T77
fD7	03117600	1S2473T77
fD8	03117600	1S2473T77
fD11	03117600	1S2473T77
fD12	03117600	1S2473T77
fD13	03117600	1S2473T77
fD14	03117600	1S2473T77
fD15	03117600	1S2473T77
fD16	03117600	1S2473T77
fD17	03117600	1S2473T77
fD18	03117600	1S2473T77
fD19	03117600	1S2473T77
fD20	03117600	1S2473T77
fD26	03117600	1S2473T77

Parts No.	Stock No.	Description
fD27	03117600	1S2473T77
fD28	03117600	1S2473T77
fD29	03117600	1S2473T77
fD30	03117600	1S2473T77
fD31	03117600	1S2473T77
fD36	03117600	1S2473T77
fD37	07176400	1S2473HS
fD38	03117600	1S2473T77
fD39	03117600	1S2473T77
△fR146	00115000	2.2Ω 1/2W F.R.
fC40	48101600	22μF 10V E.B.
fEP1	07244900	Buzzer PKM12-4A2
fVR7	48079000	4.7kΩ S.V.R., A-Side Arm Servo Adj.
fVR8	48079400	22kΩ S.V.R., A-Side Arm Interrupter
fVR9	48079000	4.7kΩ S.V.R., B-Side Arm Interrupter
fVR10	48079400	22kΩ S.V.R., B-Side Arm Interrupter

5-2. F-5034 A-Side/B-Side Indicator Board

Component Side

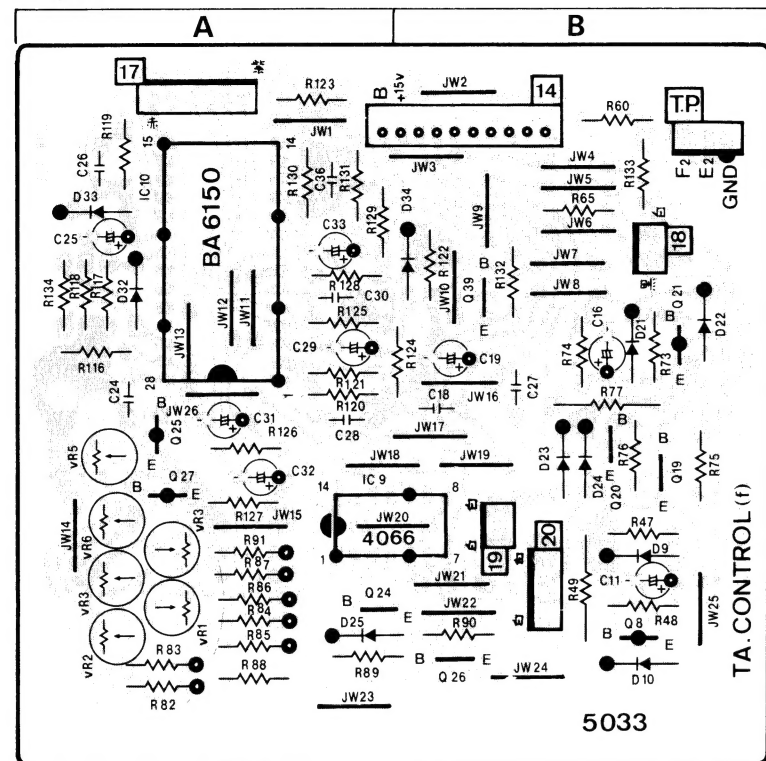


Parts List

Parts No.	Stock No.	Description
•LED		
gLD1	46162500	SLR-54URC5
gLD2	46162500	SLR-54URC5
gLD3	46162500	SLR-54URC5

5-3. F-5033 Tone Arm Servo Signal Control Board (Stock No. 00901801)

Component Side



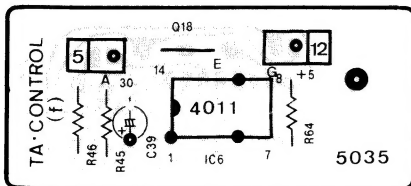
Parts List

Parts No.	Stock No.	Description
• Transistor		
fQ8	46359701	2SA952
	or 46614001	2SA1283
	or 48000801	2SA934
fQ19	48171600	DTC114YS
fQ20	46367101	2SC2603
	or 46367301	2SC2458
	or 48058801	2SC1740S
fQ21	46359701	2SA952
	or 46614001	2SA1283
	or 48000801	2SA934
fQ24	46719900	DTC124
fQ25	46359701	2SA952
	or 46614001	2SA1283
	or 48000801	2SA934
fQ26	48230600	DTC144WS
fQ27	46359701	2SA952
	or 46614001	2SA1283
	or 48000801	2SA934
fQ29	48183400	DTA114YS
fQ39	46367101	2SC2603
	or 46367301	2SC2458
	or 48058801	2SC1740S
• IC		
fIC9	07224800	TC4066BP
	or 07264600	MSM4066RS
	or 46164300	MB84066B

Parts No.	Stock No.	Description
	or 46255000	LC4066BH
	or 46421000	μPD4066BC
	or 48063800	BU4066B
	46321300	BA6150
fIC10		
• Diode		
fD9	03117600	1S2473T77
fD10	03117600	1S2473T77
fD21	03117600	1S2473T77
fD22	03117600	1S2473T77
fD23	03117600	1S2473T77
fD24	03117600	1S2473T77
fD25	03117600	1S2473T77
fD32	03117600	1S2473T77
fD33	03117600	1S2473T77
fD34	03117600	1S2473T77
fC25	46407600	22μF 25V E.C.
fC26	46284100	0.1μF 50V F.C.
fC30	46282400	3300pF 50V F.C.
fC36	46282600	4700pF 50V F.C.
fVR1	46635100	220kΩ S.V.R., a-Side Arm E Sensor
fVR2	46635100	220kΩ S.V.R., a-Side Arm F Sensor
fVR3	46635100	220kΩ S.V.R., b-Side Arm E Sensor
fVR4	46635100	220kΩ S.V.R., b-Side Arm F Sensor
fVR5	46635300	470kΩ S.V.R., a-Side Arm Delay
fVR6	46635300	470kΩ S.V.R., b-Side Arm Delay

5-4. F-5035 Disk Size Selection Board

Component Side

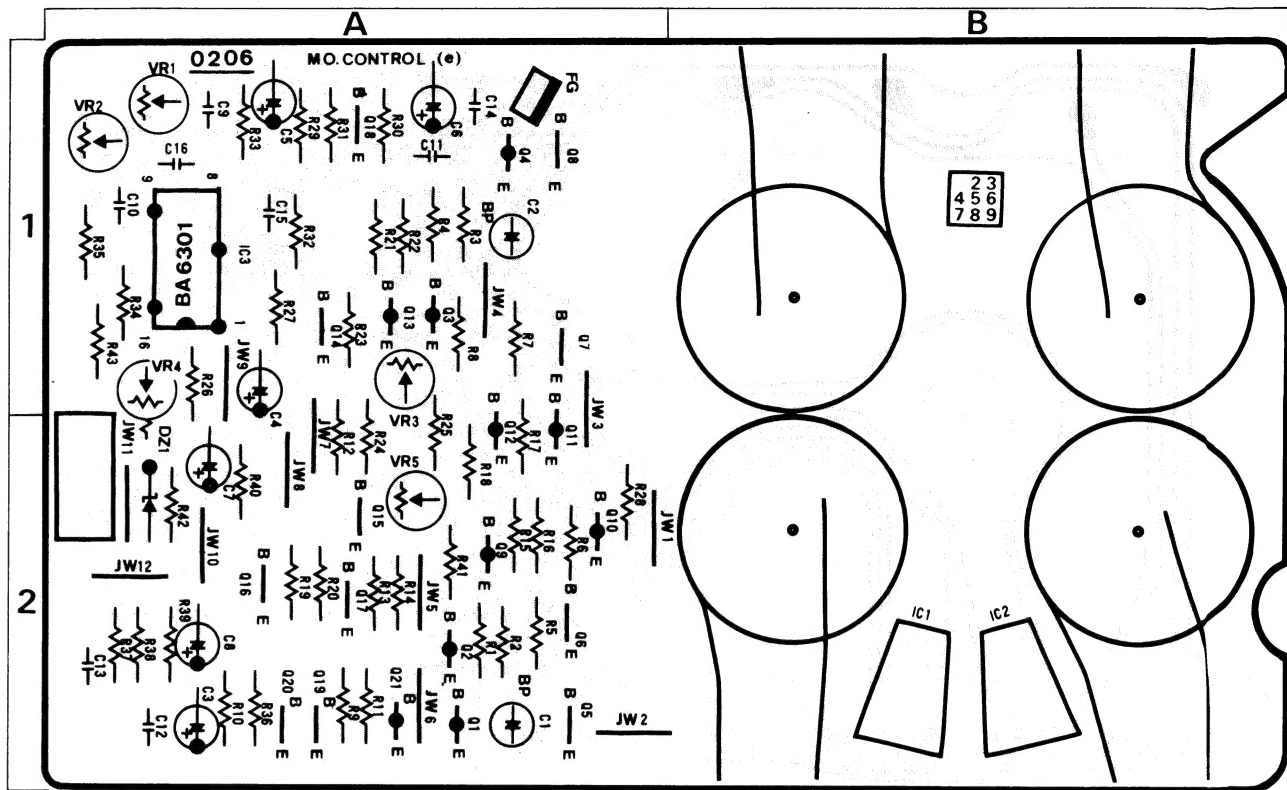


Parts List

Parts No.	Stock No.	Description
• IC		
fIC6	03604100	TC4011P
	or 07207200	MB84011BM
	or 46427200	μPD4011BC
fQ18	46160000	Photo Transistor TPS605

5-5. S-0206 Motor Control Board (with DD Motor for Disk Drive)

Component Side



Parts List

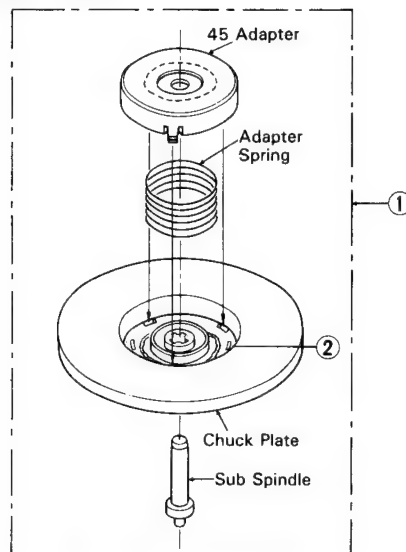
Parts No.	Stock No.	Description
• Transistor		
eQ1	46359701	2SA952
	or 46614001	2SA1283
	or 48000801	2SA934
eQ2	46359701	2SA952
	or 46614001	2SA1283
	or 48000801	2SA934
eQ3	46359701	2SA952
	or 46614001	2SA1283
	or 48000801	2SA934
eQ4	46359701	2SA952
	or 46614001	2SA1283
	or 48000801	2SA934
eQ5	46359801	2SC2001
	or 46614101	2SC3243
	or 48000901	2SC2060
eQ6	46359801	2SC2001
	or 46614101	2SC3243
	or 48000901	2SC2060
eQ7	46359801	2SC2001
	or 46614101	2SC3243
	or 48000901	2SC2060
eQ8	46359801	2SC2001
	or 46614101	2SC3243
	or 48000901	2SC2060
eQ9	46367001	2SA1115
	or 46367201	2SA1048
	or 46392001	2SA1175
eQ10	46367001	2SA1115
	or 46367201	2SA1048
	or 46392001	2SA1175
eQ11	46367001	2SA1115
	or 46367201	2SA1048
	or 46392001	2SA1175
eQ12	46367001	2SA1115
	or 46367201	2SA1048
	or 46392001	2SA1175
eQ13	46367001	2SA1115
	or 46367201	2SA1048
	or 46392001	2SA1175
eQ14	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785

Parts No.	Stock No.	Description
eQ15	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
eQ16	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
eQ17	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
eQ18	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
eQ19	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
eQ20	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
eQ21	46614001	2SA1283
• IC		
eIC1	46354301	HW-301C-Q
	or 46354302	HW-301C-R
eIC2	46354301	HW-301C-Q
	or 46354302	HW-301C-R
eIC3	46354400	BA6301
• Zener Diode		
eDZ1	46113300	05Z10-Y
	or 46113400	05Z10-Z
	or 46113500	05Z11-X
eC1	46925400	22μF 25V E.B.
eC2	46925400	22μF 25V E.B.
eC9	46283100	0.015μF 50V F.C.
eC10	46282900	0.01μF 50V F.C.
eC11	46282700	6800pF 50V F.C.
eC18	46282900	0.01μF 50V F.C.
eVR1	46739000	100kΩ S.V.R., 33m Speed
eVR2	46635300	470kΩ S.V.R., 45m Speed
	or 46919400	500kΩ S.V.R., 45m Speed
eVR3	46634700	47kΩ S.V.R., Wov & flutter
	or 46919000	50kΩ (B) S.V.R., 1/2 low & flutter
eVR5	46633700	1kΩ (B) S.V.R., Wov & flutter
	or 46918300	1kΩ (B) S.V.R., Wov & flutter

Parts List <Front View>

Parts No.	Stock No.	Description
1	18119500	Front Panel Ass'y for Silver Model (with Key SW. Ass'y)
	18119600	Front Panel Ass'y for Black Model (with Key SW. Ass'y)
1-1	48200910	Key SW., Ass'y
2	47891200	Left Side Panel for Silver Model
	47869600	Left Side Panel for Black Model
3	07952800	Leg
4	13289000	Knob, Interlock SW.
5	47891000	Top Plate for Silver Model
	47869300	Top Plate for Black Model
6	47891300	Right Side Panel for Silver Model
	47869500	Right Side Panel for Black Model
7	46935900	Slide SW., SENSITIVITY
8	46935810	Slide SW., SPEED
9	47869400	Front Cover
10	13266410	Disk Base for Silver Model
	13290910	Disk Base for Black Model
11	47910500	Dress frame for Silver Model
	47910400	Dress frame for Black Model
12	13280900	Push Knob, POWER
△ 13	46413900	Push SW., POWER

6-3. Chuck Plate



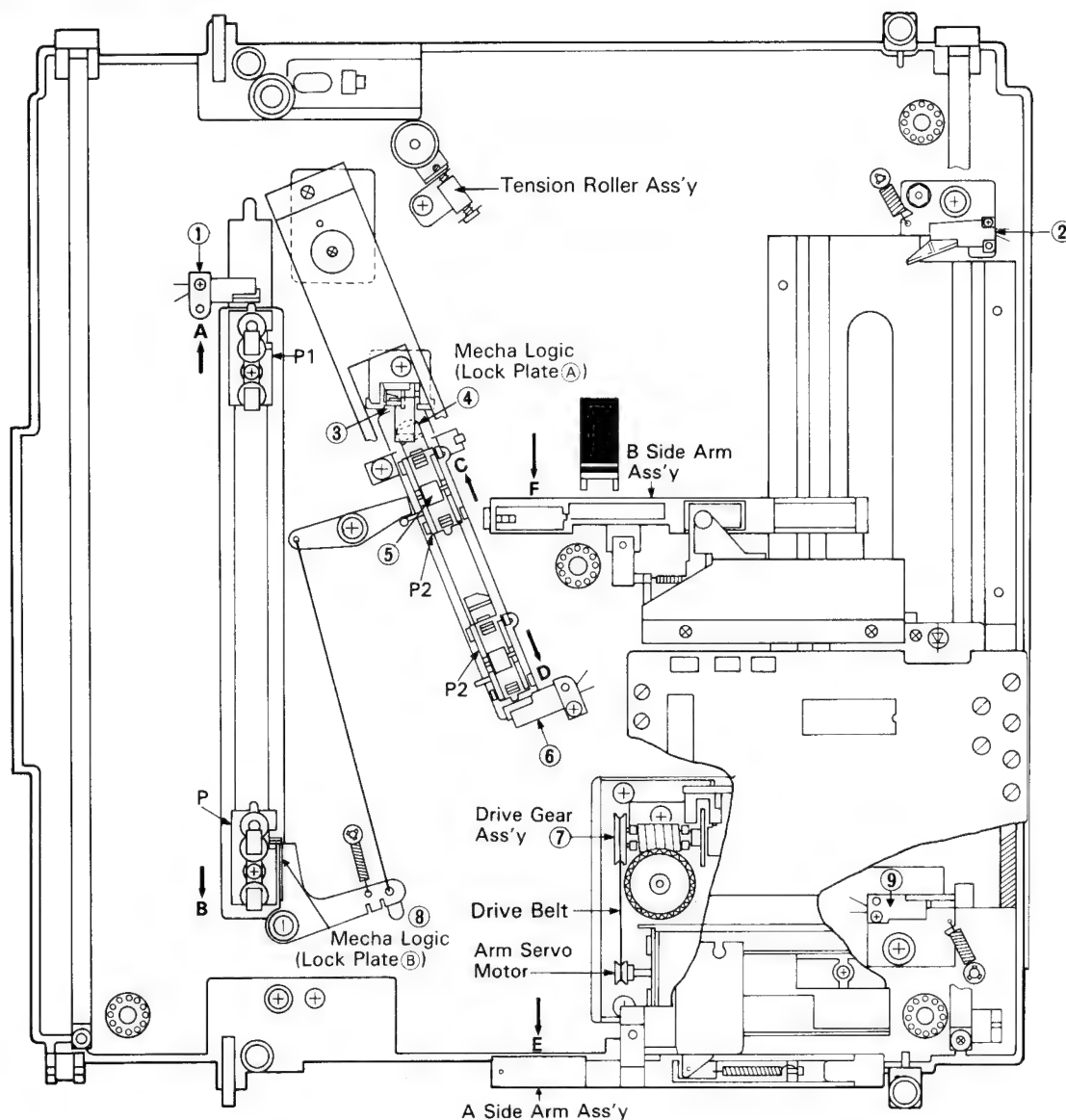
Parts List

Parts No.	Stock No.	Description
1	18086300	Chuck Plate Ass'y
2	13279100	Guide Ring

Parts List <Top View>

Parts No.	Stock No.	Description
△ 1	46413200	Power Supply Cord (XX. XX-V)
△	38004700	Power Supply Cord (UL)
△	48187400	Power Supply Cord (CSA)
△	38004500	Power Supply Cord (EU)
△	38004300	Power Supply Cord (BS)
△ 2	07204700	Slide SW., Voltage Selector (XX-V)
△ 3	46941300	Micro SW., Interlock
4	13289100	Interlock SW., Case
5	13274000	Pick-up Brush A
6	13274100	Pick-up Brush B
7	46547200	Mine Jack, COMPU EDIT. COMPU SELECTOR
8	13234400	Output Cord (XX.XX-V.CSA.EU.BS)
	13234500	Output Cord (UL)
9	13278800	Cord Cover
10	50624800	Rubber Cap
11	18083900	DD Motor for Disk Drive (with S-0206)
11-1	13260410	Lock Bush
11-2	13260300	T.T. Sheet
12	13303300	Stylus SN-909, for A-side Arm Ass'y and B-side Arm Ass'y
13	13281200	Masking sheet, Disk Base
14	18096600	Disk Plate Ass'y
△ 15	15014901	Power Transformer (XX.XX-V)
△	15014902	Power Transformer (UL.CSA)
△	15014905	Power Transformer (EU.BS)
16	46173300	Relay, S-0218 Muting Board

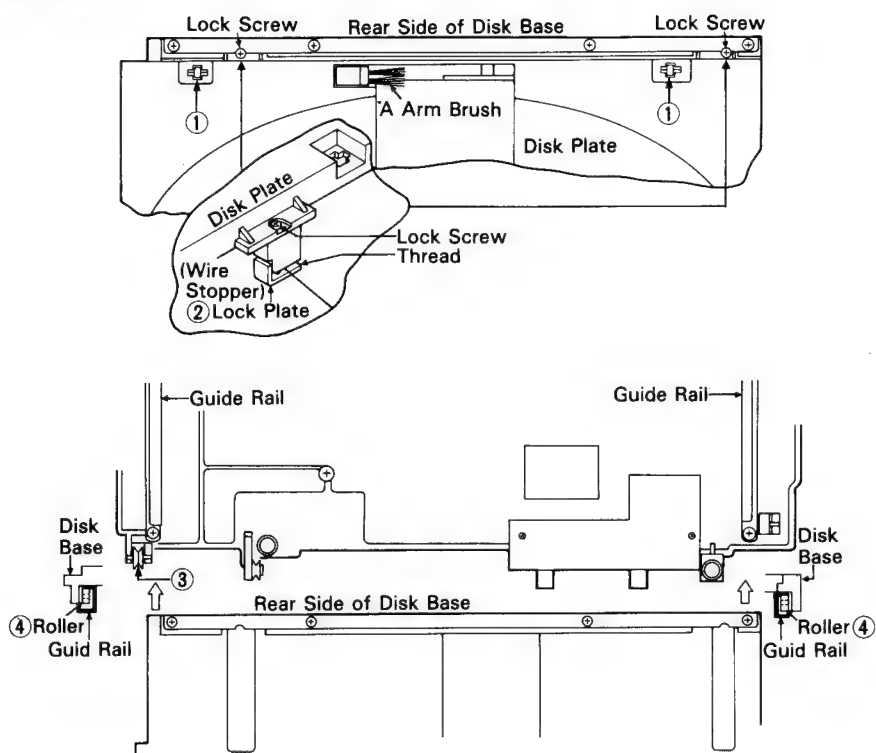
6-4. Top View of Main Chassis



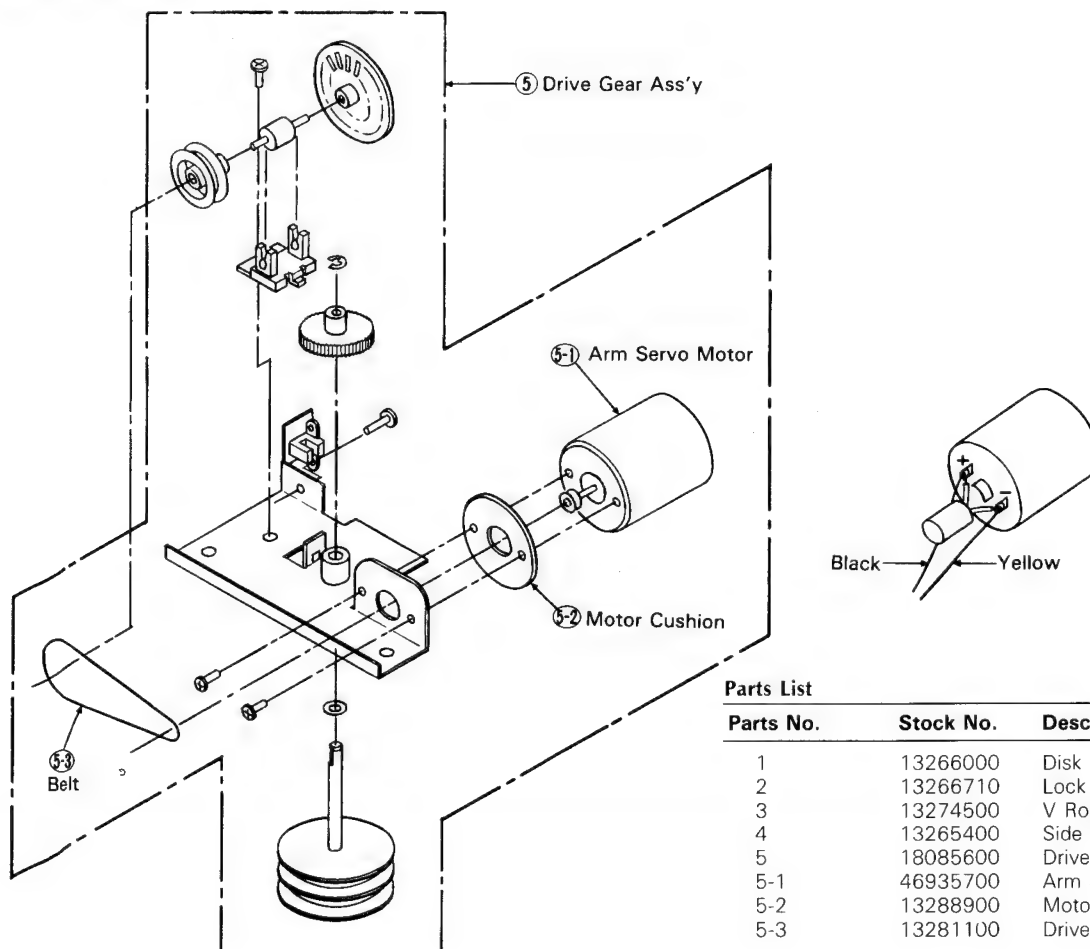
Parts List

Parts No.	Stock No.	Description
1	46926900	Micro Switch, disk open
2	46925200	Micro Switch, B-Side Arm reset
3	13265700	Hook Arm Spring
4	13265010	Lock Plate A
5	13264800	Thrust Holder
6	46926900	Micro Switch, Chuck ON
7	18085600	Drive Gear Ass'y (See Fig. 6-6)
8	13265300	Lock Plate B
9	46925200	Micro Switch, A-Side Arm reset

6-5. Disk Base & Disk Plate



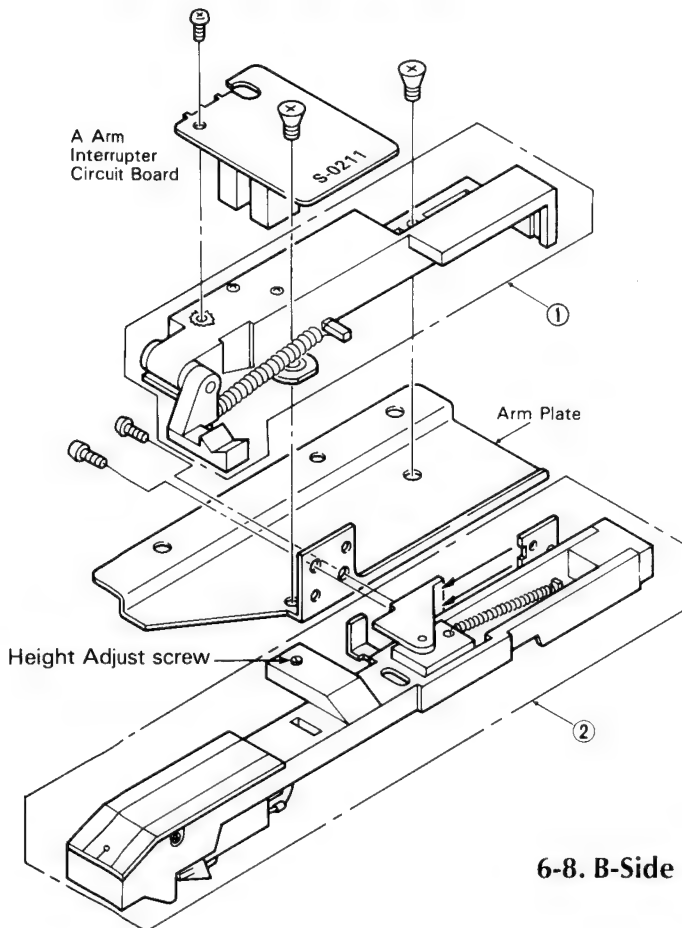
6-6. Drive Gear Ass'y



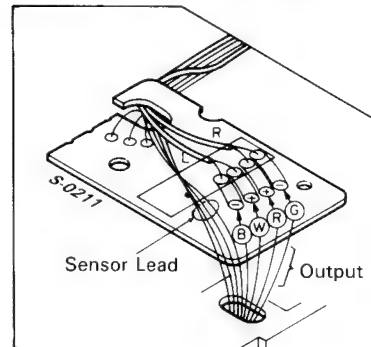
Parts List

Parts No.	Stock No.	Description
1	13266000	Disk Plate Roller Ass'y
2	13266710	Lock Plate (Wire Stopper)
3	13274500	V Roller
4	13265400	Side Roller Ass'y
5	18085600	Drive Gear Ass'y
5-1	46935700	Arm Servo Motor
5-2	13288900	Motor Cushion
5-3	13281100	Drive Belt

6-7. A-Side Arm Ass'y & Lifter Ass'y



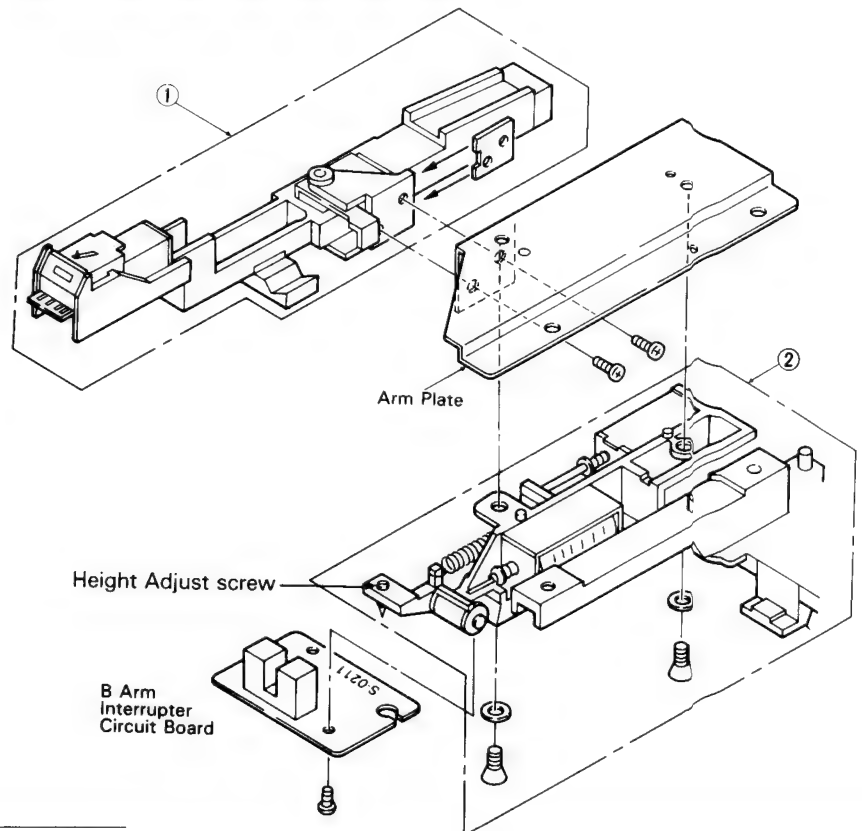
•Wiring Diagram of S-0211 (A Arm Side)



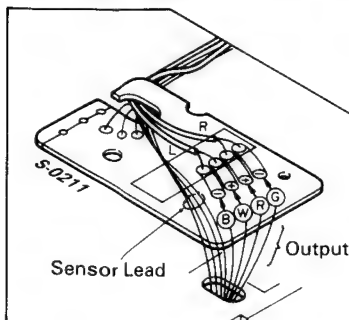
Parts List

Parts No.	Stock No.	Description
1	48224000	A-Side Lifter Ass'y with Plunger A
2	18095700	A-Side Arm Ass'y

6-8. B-Side Arm Ass'y & Lifter Ass'y



•Wiring Diagram of S-0211 (B Arm Side)



Parts List

Parts No.	Stock No.	Description
1	18095400	B-Side Arm Ass'y
2	48224100	B-Side Lifter Ass'y with Plunger B

7. HOW TO REPLACE MAIN PARTS

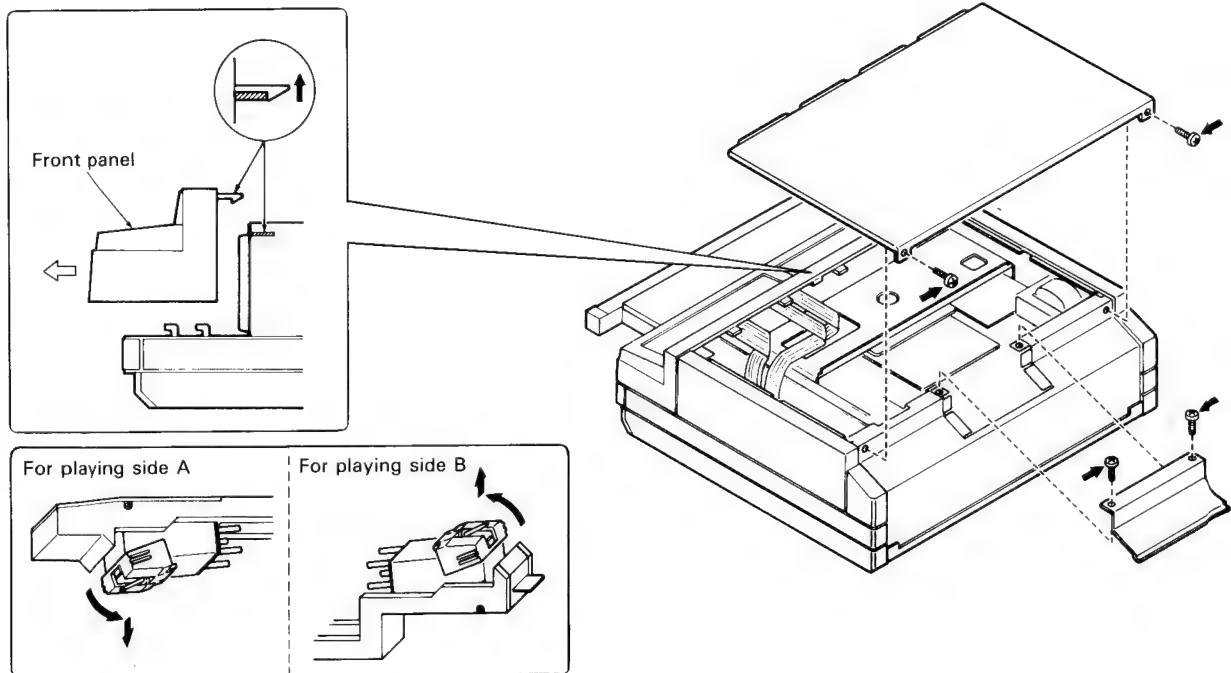
A. How to remove Front panel and Stylus

- 1) Press the OPEN/CLOSE key so that the **record table protrudes approx. 10 cm**, and press the POWER switch to switch the power off.
- 2) Remove 2 rear screws and the top plate, then remove 2 screws and the rear cover.
- 3) Unfasten the hooks at both sides at the rear of the front panel, pull toward you gently, turn over and set on top of the unit. Take care not to damage the front panel during this procedure.
- 4) Pull the stylus holder out gently in the direction of the arrow as shown in the diagram (Fig. 7-1). Next, taking care not to touch the

stylus tip fit the replacement stylus by the reverse procedure to that used for removal.

- 5) Attach the front panel by reversing the removal procedure. Caution is required as the POWER switch will strike the rear of the panel when it is attached.
- Also, be sure to securely fasten the hooks at the rear of the panel.
- 6) Fit the 2 screws for the rear cover and top plate respectively.
- 7) Switch on power to the unit. The disk base automatically draws in.

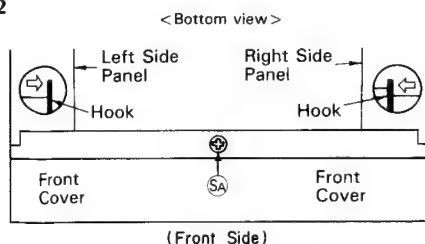
Fig. 7-1



B. How to remove Front cover (See Fig. 7-2)

- 1) Remove the front panel. (See A. Front panel and Stylus)
- 2) Loosen a Screw fixing front cover.
- 3) Unhook the front cover through the apertures formed on this side of the right- and left-side panel and then extract the front cover toward you.

Fig. 7-2



C. How to remove keyboard

- 1) Remove the top plate and front panel.
- 2) Remove F-5034 circuit board.
- 3) Remove three screws for fixing the keyboard Ass'y and keyboard holder to the front panel.

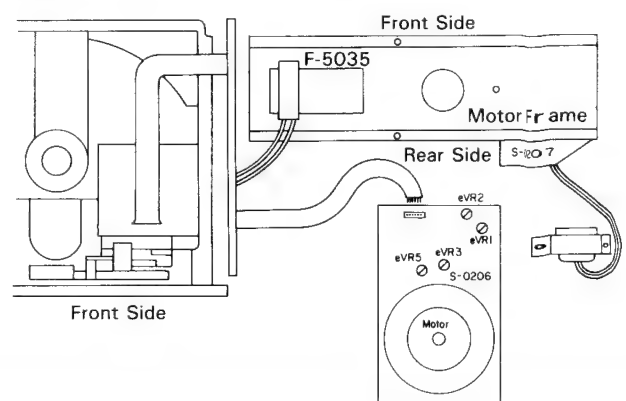
D. How to remove side panels

- 1) Remove the top plate, front panel and front cover.
- 2) Remove four screws for fixing the side panels and top plate.
- 3) Extract the right- and left-side panels.
- 4) Remove the rear panel.

E. How to remove disk driving DD motor with control board

- 1) Remove the top plate, front panel, front cover, right- and left-side panels, and rear panel.
- 2) Remove four 4×8 binding screws for fixing the motor frame.
- 3) Place the removed motor frame on the right hand of the set.
- 4) Remove three 4×12 screws for mounting the motor.

Fig. 7-3



F. How to remove A-arm assembly and lifter assembly (See Fig. 6-7 on Page 14)

- 1) Remove the top plate and front panel.
- 2) Disconnect the lead extending from the arm of board S-0211.
- 3) Remove a 2×4 binding screw for mounting board S-0211.
- 4) Remove two 2×4 flat-head screws for fixing the lifter assembly.

G. How to remove B-arm assembly and lifter assembly (See Fig. 6-8 on Page 14)

- 1) Remove the top plate, front panel, front cover, right- and left-side panels, rear panel, and motor frame.
- 2) Set the B-arm at its reset position by pulling the disk plate to its extreme end. (Turn on OPEN key and then off when the disk base is pulled out extremely.)
- 3) Remove the B-arm stylus.
- 4) Remove two 3×8 screws fixing the arm plate.
- 5) Perform the same procedure from (2) to (4) stated in item F above.

H. How to remove disk base and disk plate (See Fig. 7-4)

- 1) Remove the top plate, front panel, front cover, right- and left-side panels, and rear panel.
- 2) Pull the disk base toward you to its extreme front end by depressing OPEN key.
- 3) Loosen Lock Screw for fixing mechanism-driving strings to the disk plate. Remove the string from the metal fixture (Lock Plate). (Take care not to remove the fixture from the disk plate by excessively loosening the screw.)
- 4) Remove a 3×8 fixture screw positioned (Stopper) on the left side of the disk base. (Fig. 7-6)
- 5) Extract the disk base together with the disk plate.

Fig. 7-4

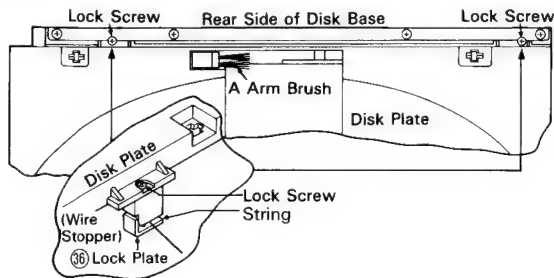
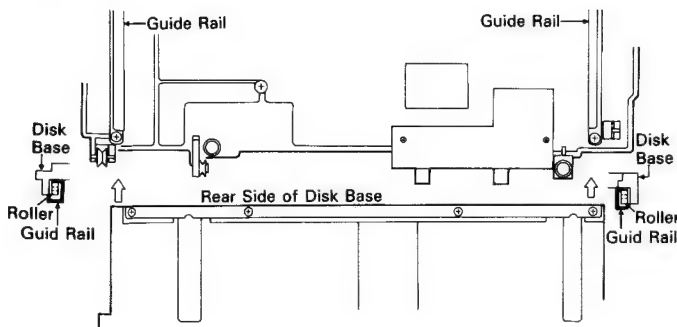


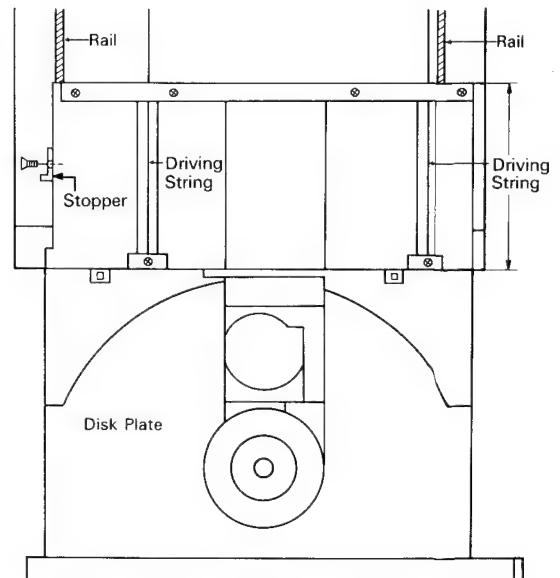
Fig. 7-5



I. How to install disk base and disk plate (See Figs. 7-4, 7-5, and 7-6)

- 1) Depress OPEN/CLOSE key to move the movable pulley P₁ to position A, the movable pulley P₂ to position C and the A and B-arms to positions E and F, respectively. (See Fig. 6-4 on Page 12)
- 2) Fit the disk plate onto the disk base.
- 3) Mount the disk plate onto the rail and then push it about 10cm. Fix the disk plate with a metal fixture (Stopper) located at the left side of the disk base.
- 4) Pull the disk plate to its extreme front end and then hang two right and left strings on the string fixing fixture (Lock Plate) located on the plate end portion.
- 5) By depressing OPEN/CLOSE key, push the disk table to its extreme rear position by the hand, when the movable pulley P₁ moves from position A to position B. (See Fig. 6-4 on Page 12)
- 6) Push the disk plate to a position where the disk plate is tightly in contact with the rear portion of the disk base.
- 7) Tighten two string fixing screws. The string drives the mechanism of the disk plate.
- 8) Be sure that the disk base and disk plate move normally by depressing OPEN/CLOSE key.

Fig. 7-6

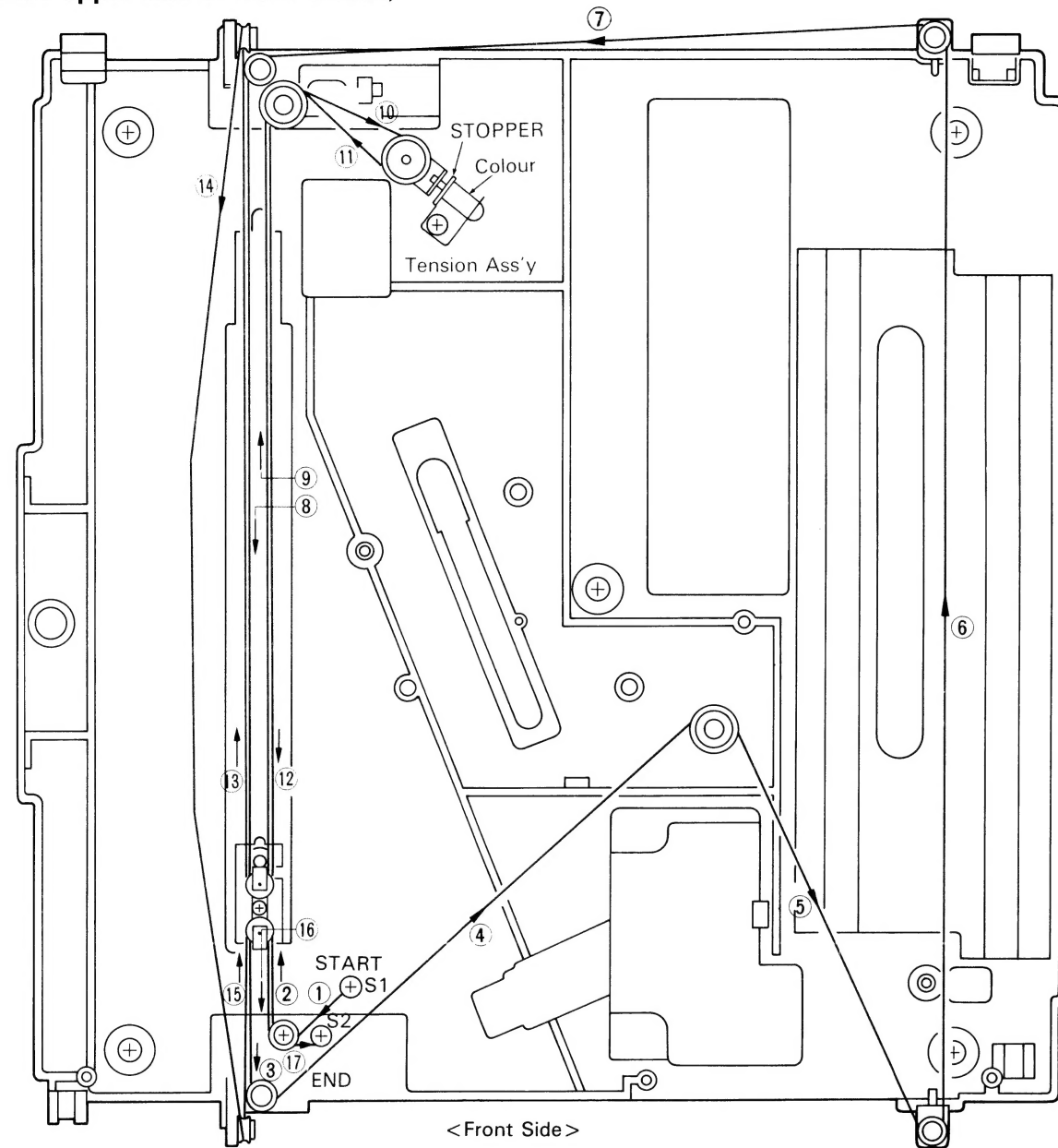


J. How to remove drive gear assembly and arm servomotor (See Fig. 6-6 on page 13)

- 1) Set the A-arm at its extreme rear position. (Turn on OPEN/CLOSE Key and turn off the main switch when the A-arm reaches the extreme rear end position.)
- 2) Remove the top plate, front panel, front cover, right- and left-side panels and the rear panel.
- 3) Remove the disk plate and disk base.
- 4) Remove screws for mounting the arm servomotor.
- 5) Remove screws for mounting the drive gear assembly.

8. HOW TO REPLACE MECHANISM DRIVING STRING

(On the upper side of main chassis)



<Front Side>

•Replacement procedure

1. Remove the top plate, front panel, side panel and rear panel.
2. Remove the motor frame.
3. Remove the disk table and disk plate.
4. Make a knot around the screw S_1 , stretch the string in accordance with procedure from 1 to 17, and tie up the string end around the screw S_2 .
5. After having assembled the set completely, turn on the main switch to make sure that the disk table and disk plate opens or closes normally and that the normal music reproduction can be made.

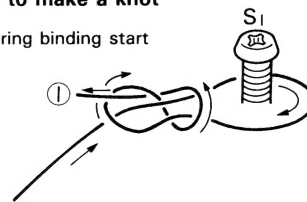
Note) Adjust the tension of the stretched string by the use of the adjusting screw of the tension assemble so that the collar is brought into contact with the stopper as shown above.

Parts List

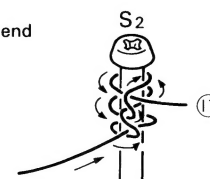
Parts No.	Stock No.	Description
1	60360530	Driving String (3m)
2	13303500	Tension Roller Ass'y

* How to make a knot

1. String binding start

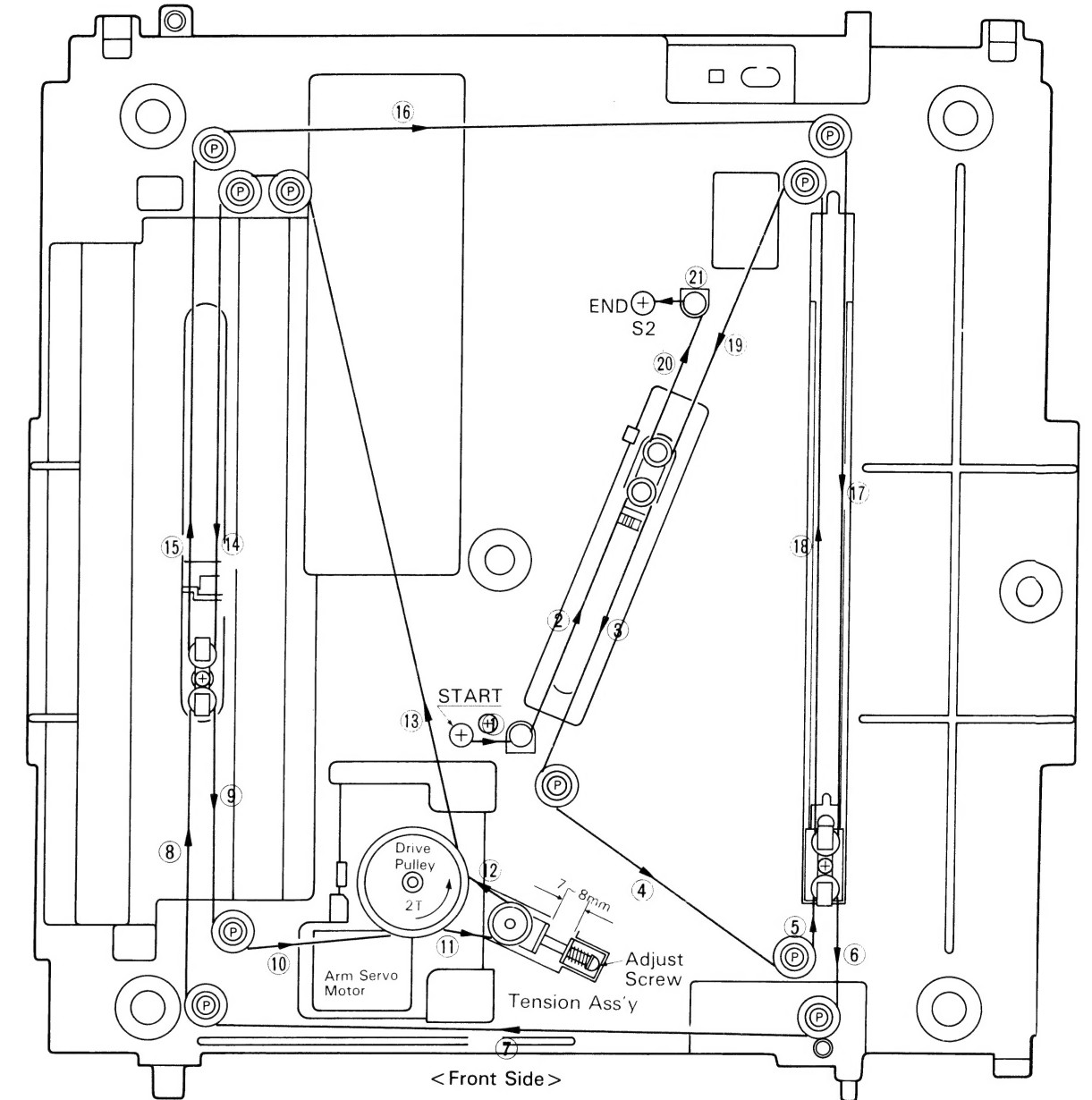


2. String binding end



9. HOW TO REPLACE MECHANISM DRIVING STRING

(On the back side of main chassis)



<Front Side>

•Replacement procedure

1. Remove the top plate, front panel, side panel and rear panel.
2. Remove the motor frame.
3. Remove the disk table and disk plate.
4. Remove five screws for fixing the main chassis, and then turn the main chassis upside down.
5. Make a knot around the screw S_1 , stretch the string in accordance with procedure from 1 to 21, and tie up the string end around the screw S_2 .
6. After having assembled the set completely, turn on the main switch to make sure that the disk table and disk plate opens or closes normally and that the normal music reproduction can be made.

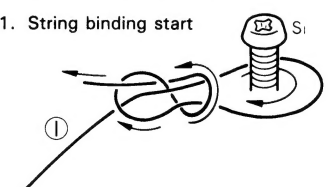
Note) Adjust the tension of the stretched string by the use of the adjusting screw of the tension assembly as shown above.

Parts List

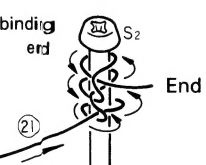
Parts No.	Stock No.	Description
1	60360530	Driving String (3m)
2	07600910	Tension Ass'y

* How to make a knot

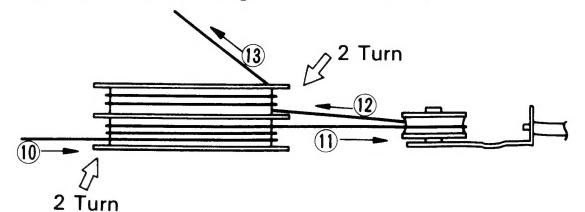
1. String binding start



2. String binding end



* How to bind the string around drive pulley

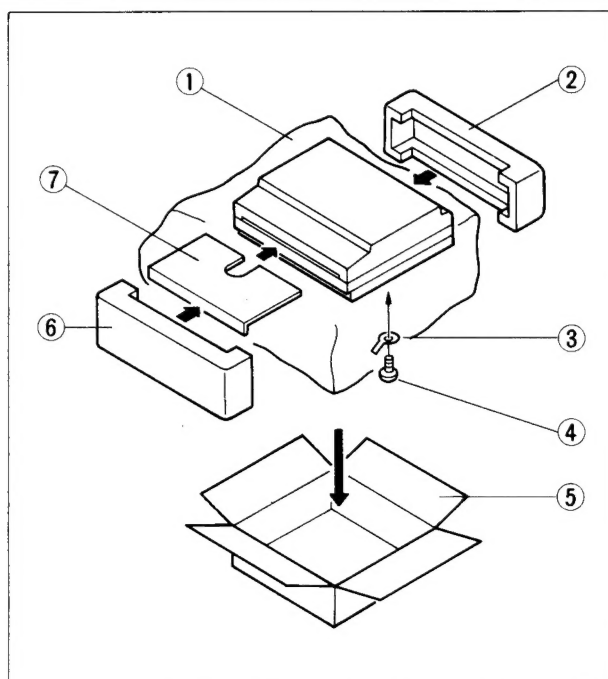


- * Design and specifications subject to change without notice for improvement.
- * La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
- * Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



11. PACKING LIST

Parts No.	Stock No.	Description
1	47859600	Vinyl Bag
2	47896700	Styrofoam Packing (Rear)
3	51829200	Tag Washer
4	00423600	Transit Screw, 4 x 16 Binding
5	47892200	Carton Case for Silver Model (XX.UL.CSA.EU.BS)
	47892100	Carton Case for Black Model (XX.UL.CSA.EU.BS)
	47892400	Carton Case for Silver Model (XX-V)
	47892300	Carton Case for Black Model (XX-V)
6	47896800	Styrofoam Packing (Front)
7	47877300	Corrugated Board



•Note: XX-V < EXPORT (V) > Standard Version with Outer Voltage Selector.
("V" mark is indicated on the carton case.)

12. ACCESSORY LIST

Stock No.	Description
48181600	Mini Plug Cord
46969200	Operating Instruction
46974300	Operating Sheet (BEFORE USE)

P-L95R

Sansui

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(SM1-226)

Printed in Japan (450420M) <Stock No. 36514800>